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Chapter 10

SUPPLY CHAIN DYNAMICS AROUND PRINT ON DEMAND IN AUSTRALIA

Tony Burch

Without doubt there are many opinions as to the exact meaning of 'print on demand' (POD). For the purposes of this chapter, I describe POD as a need to produce conventional-looking printed and bound books in small volumes at short notice. There is an industry assumption that conventional book printing technology is not cost effective at the small-volume levels demanded of POD. There is also an industry presumption that POD production is based on laser/toner/ink-jet technology, printing direct to paper from digital files, thus avoiding the conventional costly processes of film, plate, printing press set-up and start-up waste of conventional print technology.

Typical of POD digital-print technology are three toner-based technologies, the Fuji-Xerox sheet-fed Docutech, the Océ web-fed Demandstream series, and the IBM web-fed InfoPRINT 4000 series. There is also the ink-jet technology of Scitec web-fed equipment that has, to my knowledge, not been used in Australia for book production, but is making inroads overseas. I have myself had extensive practical production experience of the first three technologies and have researched the latter. There are other digital-print technologies available, including some based on conventional inks, re-usable plates etc., but these are more suitable for full-colour production and therefore carry a further cost penalty if used for the one-colour text that the vast majority of books require. Therefore, this chapter does not discuss these more costly alternatives.

With reference to the issues of POD supply chain dynamics, logic suggests that there are a set of cost structures that of themselves shape the viability, or otherwise, of POD for the book
printing and publishing industry. The principal POD technology providers, all large multi-national firms, can calculate the total cost of production using their POD solutions, making it seem obvious that POD should be a significant total-cost effective process that makes economic sense. Yet major book-producing organisations (PMP is an exception, see later in this chapter) and mainstream publishers in Australia have not yet embraced digital POD. Research suggests that there is a degree of reluctance to embrace the technology locally, yet digital POD book printing is a success elsewhere internationally.¹ Market or geographic size alone appears not to be the prime factor for using POD. Although many major players in the book industry would contend that the unit cost of POD is still too high to make economic sense, some organisations continue to utilise the technology and even to thrive on it, as suggested later in this chapter.

I contend that the supply chain dynamics and cost-structure limitations of POD are not, of themselves, the prime inhibitors to the uptake of POD technology. The belief of many major players in the book industry that the unit cost of POD (via the supply chain dynamics) is still too high to make economic sense is not necessarily true for all. I further contend that the supply chain dynamics around POD cannot be considered purely on economic terms without understanding the historical and contemporary conditions inherent in the Australian book printing industry. Many of the conditions that have shaped the Australian industry and have had an impact on the viability, or otherwise, of the use of POD technology, are unique. I suggest that unwillingness to change traditional business models is a bigger issue than the notional unit cost of a book produced POD.

Furthermore, there are important emerging trends in publishing and book selling that may impact the use of POD in ways that are not necessarily unit-cost driven. This could lead to an increase in the number of authors disenfranchised from the mainstream publishing market. But it becomes an added incentive for new forms of

¹ Bruce Otte, Manager Worldwide Production Solutions Strategy & Marketing, Printing Systems Division, IBM: Otte sees international markets embracing the technology at varying rates with USA, UK and Italy moving much more rapidly than Japan, Australia, Canada or Germany. Note that as market, population, or geographic size appears to have little to do with acceptance or otherwise; other forces must be at play.
publishing, and thus perhaps can be seen as a growth in opportunities for digital POD.

HISTORICAL IMPACT ON POD

For many years, Federal government ‘book bounties’ protected the Australian book printing industry significantly. In the distant past these have exceeded 30%. Based on local-only production sales value, book bounties were paid directly to the book printer, and then theoretically remitted to the publisher. Not all publishers demanded the printer pass the bounty to them, and it appears that book bounty in part became a useful direct subsidy to printers. The bounty was progressively reduced and finally phased out in very recent times, but I suggest that it, and its benefits to both publishers and book printers, has been a factor that has helped shape present-day competition between book printers in Australia. It encouraged local production, and made a wider range of titles and authors economically viable.

Long-term ‘protection’ may have been a significant factor in shaping book printing, based around high-volume book-specific print and binding technology. In turn, that technology has helped shape print activity, prices and efficiency, leading to the existing market conditions that have impacted on the evaluation of the economics of POD.² It is also probable that this ‘protection’ encouraged the development of what I call the ‘Big Three’ technology-based oligopoly of book printers in Australia—McPherson’s, Australian Print Group and Griffin Press. The members of the oligopoly are described below:

- Griffin Press, based in Adelaide South Australia and part of PMP Communications. PMP is probably Australia’s largest non-newsprint printing conglomerate, and has a presence in POD technology, via its dbook operation in Sydney NSW, using Xerox Docutech sheet-fed facilities.
- McPherson’s Printing Group (MPG), whose book-printing capacity is based at its book plant in Maryborough, a small country town in rural Victoria. MPG is part of the McPherson’s

² Later in this chapter, I will describe how a very efficient book production industry, based on the oligopoly, has eroded some of the low quantity cost advantages of POD.
Limited public company, an international market leader in knife technology, consumer products and printing of telephone directories. MPG extensively trailed POD via Xerox Docutech sheet-fed, and Océ and IBM web-fed technology during 1999 and 2000, but is not currently using POD technology for any traditional volume book product.

- Australian Print Group (APG) is a private company established in 1986, as a direct competitor to MPG, by ex-employees of what then became MPG’s Maryborough book plant. Understandably, APG is also based in Maryborough, making the rural township the ‘book-printing’ capital of Australia, with a heavy concentration of book-printing know-how. APG was taken over by MPG in mid-2001 and both operations have since been undergoing significant rationalisation.

For many years, the Australian book-printing market has been dominated by the Big Three, all centered around the high-volume, book-specific conventional web technology. I am not aware of any other printer in Australia with such technology. Within this fiercely competitive oligopoly, high efficiency levels make entry into the volume book production market difficult for other players.

Common denominators of the Big Three oligopoly (since mid 2001 the Big Two) have been the specialist printing and binding technology that dominates the high-volume print end of the book market. For many years, the ‘Big Three’ have been in intense competition to capture the large print contracts offered by the major publishers.

The General Manager of MPG, George Gatehouse, a leading industrialist influential on various industry committees and recent research initiatives, has often correctly stated that no one company owns the technology or the print-expertise. That has been particularly demonstrated by the Big Three who have all been using similar web technology. Perhaps one or more of the three are more efficient at a specific book size (format), and at times they may have leapfrogged each other with new but essentially similar equipment. So with technology not being a differentiating factor between the Big Three they have been limited to competing via superior service

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3 There is a small Sydney based company concentrating on software manuals using a web-fed conventional printing press designed for relatively low production runs, but it has nothing like the capacity of the equipment used by the oligopoly.
and highly competitive product pricing. Volume-hungry technology has driven each company within the oligopoly in a constant search for the volume such technology demands. Thus all three have been active in aggressive pricing policies, as have astute major publishers who are tough contract negotiators. Indeed, Accenture Consulting states that ‘... the shrinking market and the sector’s over-capacity have exacerbated price competition between Australian printers to the extent that they now survive on a wafer thin profit margin, averaging 1.3% in 2000.’

It is evident that market conditions have been dominated at the high-volume end by a technologically efficient oligopoly. Contributing factors are:

- Same or similar technology within the oligopoly with high capital costs barring other entrants.
- Intense long-term pricing pressure by large customer publishers.
- Conditions of wafer-thin margins within the industry generally, with two of the three main book printers ultimately answerable to public company boards for bottom-line results.
- Two of the Big Three have been operating since 1986 in the one regionally located township (MPG and APG), managed by staff—historically closely connected—who have continued to operate in a cohesive rural environment. A service industry has grown around these two organisations.

In my view these long-term circumstances have implications for the viability of POD. Such intense competitive activity has driven efficient utilisation of the shared technology to levels not originally considered by conventional technology providers. Thus web-print equipment designed to be most efficient as high-volume producers (say 10,000+ book units per order) has for years been ‘tweaked’ by these organisations to be efficient at much lower quantities. Not only have they coped with Australian average book print production runs of below 7000 (an anecdotal figure based on personal observation not empirical data), but they have been forced to become efficient at such low levels as 500 to 1500 book units per order.

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5 MPG part of McPhersons Limited and Griffin Press part of PMP Communications.
New Markets for Printed Books

The result of this long-term drive toward super efficiency within the web-based oligopoly is reinforced by Accenture’s Ad Rem research which suggests ‘... that a joint industry approach to supply chain reform would dramatically lower the overall cost structure of the industry... and ...offer opportunities worth approximately $155 million.’ However, what is particularly interesting is the detail of the potential $155 million savings. At an RMIT University industry forum in Melbourne, Australia, in October 2001, Chris Atkins, partner in Accenture Consulting and coordinator of the Ad. Rem Report, showed the breakdown of the $155 million:

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<tr>
<td>Collaborative demand planning, book returns</td>
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<tr>
<td>Collaborative book inventory planning</td>
<td>$39mil</td>
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<tr>
<td>Book range management, write-offs</td>
<td>$9mil</td>
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<tr>
<td>Consolidation of volume, distribution</td>
<td>$50mil</td>
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<tr>
<td>Aggregation of paper sourcing</td>
<td>$10mil</td>
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<td>Total potential annual savings</td>
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Only $10 million was attributed to the book-printing sector, and even that did not relate to production efficiencies but to cooperation on purchasing power between competitor book printers. Thus, an important and extensive research project involving participation of over 50 organisations in the Australian book industry, found no significant savings to be made within the book-printing sector. This suggests a very efficient production oriented oligopoly.

In conclusion, the Big Three are already producing, relatively efficiently, at unit quantities small enough to intrude into the small-run environment in which POD is suggested to be competitive. This efficiency shift has overlapped into the higher quantity end of efficient POD production, thus removing potential volume from the capital justification for a POD investment.

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7 Patrick Bernau of Xerox believes the efficiency cut-off between conventional print and POD print can be as high as 700–1000 copies, depending on the product and business model used. Orte of IBM suggests more than 700 copies of a book are likely to be more cost effective using traditional technology.
INDUSTRY OBSERVATIONS—GENERAL

Discussions have been held with a number of senior industry players. Information was received from:

- Gatehouse (MPG), Lea (APG) and Leevers (PMP)—representing the Big Three book printing organisations;
- Nolan (Pearson Education), Hanrahan (Random House), Quick (UNSW Press)—a range of publishers;
- Bernau (Xerox), Otte (IBM), and Andrews (Océ)—representing the three most important POD technology organisations; and
- Slevin (Hawker Brownlow Education), Graham (bob-e-books.com) and Hamilton (Blackwell Science)—innovative publisher users of new and emerging technology. Pearson Education should also be considered part of this category.

INDUSTRY OBSERVATIONS—BOOK PRINTERS

George Gatehouse states that MPG put considerable effort into practical research of digital book printing over a two-year period, 1999–2000, including sheet digital print equipment, and joint ventures with two web digital print equipment providers. All three technologies were investigated thoroughly in true operational environments. The research concluded late in 2000 and MPG chose not to continue with the development of such technology for trade book printing. Gatehouse states the process for short-run POD trade books is subject to high capital costs, high value-added costs of post-print operations, and attracts no price premium. Thus the trade product cannot at this time be made cost effectively. However, MPG continues to be a major player in the legal report market, producing digitally on a POD basis, as the product has low post-print costs and has a specialised purpose. The ultimate customer is prepared to pay a premium for the service, not just the printed page.

One of APG’s founding members, Trevor Lea, believes that APG has always been the most innovative and profitable of the major book manufacturers. For several years APG had digital-print

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8 The ‘Big Three’, MPG, APG, and Griffin Press, are separated from the rest of their competition by having high volume book-specific and very efficient web-based production equipment.
technology in-house\textsuperscript{9} and were therefore book POD capable. Yet APG made few inroads into the trade book sector of the market. Lea considers traditional book publishers are ‘hard nuts to crack’ due to already low margins as well as the emphasis placed on unit cost. Some further limiting factors include his belief that some mainstream publishers have very old-fashioned ways of preparing their internal costing models, and this may inhibit opportunities to take onboard digital print technology.\textsuperscript{10}

John Leevers, Group General Manager Print, of PMP\textsuperscript{11} is more positive about digital POD technology, suggesting it is just another manufacturing process to be included within a suite of processes, both traditional and new. He takes the stand that digital POD is here to stay and will continue to evolve. My impressions, from discussions with Leevers, are that PMP are in the technology (via its dbbook initiative) for the long-term and though they continue to invest extensively in their traditional book-printing base, Griffin Press, both organisations and market sectors are important to PMP.

It is worthy of note that currently the two remaining oligopoly members (MPG and PMP) have divergent views and strategies regarding the use of digital POD technology and its place in their production structures.

\textbf{INDUSTRY OBSERVATIONS—PUBLISHERS}

Marc Nolan is the Manager, Publishing Technologies for Pearson Education, Australia’s largest educational publisher.\textsuperscript{12} Nolan believes the prime benefit of Pearson’s decision to have in-house digital POD facilities is an increase in control over the supply chain, particularly for import substitution and resurrection of previously inaccessible out-of-print education publications. In some instances

\textsuperscript{9} An early-model Océ digital web that APG used primarily for production of very small runs of loose-leaf legal documents that had high value-added content.

\textsuperscript{10} The need for new management models is echoed by comments elsewhere in this paper by Hanrahan of Random House, by Nolan of Pearson Education, Quick of UNSW Press, Bernau of Fuji Xerox, and Andrews of Océ Australia.

\textsuperscript{11} Public company owning Griffin Press and dbbooks. Leevers is a professional senior executive recruited by PMP from outside the printing and publishing industry.

\textsuperscript{12} Nolan has an extensive publishing background and has been a driving force behind Pearson’s decision to go in-house with digital POD book manufacturing, using Xerox sheet-fed Docutechs, and based on years of successful experience that other Pearson international operations have had with in-house POD.
POD has allowed Pearson to reduce minimum print runs from, say 500 units, to as low as five. But dedication to getting best use from the technology has meant simplifying product specifications and moving towards standard products. However, Nolan says the economics of POD are yet to be proven, even though his internal production costs are lower than prices available from outside digital POD print organisations. Nolan believes POD needs ‘critical mass’ to make it viable.

Nolan cautions that print technology is not the main issue when considering the commercialisation of POD. The process requires significant developments in business systems to make it viable and were it not for dedication and hard work, built on the foundation of Pearson Education’s 10-year international digital POD experience, the project may have failed or not proceeded at all.

Lisa Hanrahan, Production Manager of Random House Australia Pty Ltd, one of Australia’s largest trade publishers, is a staunch long-term proponent of POD. She has problems making the cost structure work for POD, having tried over time to develop digital book products with two of the main digital book printing organisations. She believes major publishers still have traditional margin expectations across their total product range, but achieving such margins is not possible with POD product. She believes also that traditional production and publishing models need rethinking, specifically for POD, and seeks ways of getting POD costs down by providing volume to digital book printers.¹³ This is in itself a concept inconsistent with an implied condition of POD: that it is only cost-effective because unit quantities are so low as to make conventional production uncompetitive.

Di Quick, Production Design and Editorial Manager, UNSW Press, has selectively used POD. She also has problems with the unit cost. Though she would prefer to be able to order in quantities of 50 to 100 copies, at that level unit-price is not cost effective, and Quick usually orders no fewer than 200 units, based on cost. Administration costs are the same whether processing 50 or 500 units, and Quick believes a new business model may be necessary both within the publisher itself and at the POD provider. If this were to reduce/remove administration costs, reduce warehousing

¹³ Similar to Nolan’s concept of critical mass.
and distribution costs, etc., then POD at low unit level costs may be more appealing.\textsuperscript{14}

**INDUSTRY OBSERVATIONS—POD TECHNOLOGY PROVIDERS**

Even digital POD technology providers are reassessing their strategies for success within the publishing market. The largest POD technology (potential or actual) providers in Australia are Fuji-Xerox, IBM, and Océ.

Fuji-Xerox sheet-fed Docutech continues to be a success story, though I would contend such success in the first instance has been based on non-book products. Nevertheless, Docutechs are producing most of the digital POD books printed in Australia. Patrick Bernau, Industry Marketing Manager Graphic Arts, Fuji-Xerox Australia\textsuperscript{15} sees the need for new business models to overcome industry-wide pre-conceived ideas where conventional format and construction decisions, based on traditional print and marketing are often not appropriate to POD, thus limiting its use.\textsuperscript{16} He sees the need for new marketing strategies to liberate content (I assume that excludes trade fiction).\textsuperscript{17} Bernau sees a need for new marketing processes to drive manufacturing decisions, rather than the current entrenched cultural mindset based on existing manufacturing processes. With the evolving POD technology being but one driver for change, he not only perceives a need for new business models, but also believes there is potential for new players to enter the market, with publishers returning to their prime role of knowledge developers.

\textsuperscript{14} Gatehouse of MPG discussed the high cost of post-print operations and the book product having no price premium as bars to POD. Perhaps a new business model for POD providers might need to collectively address these add-on costs to both printer and publisher.

\textsuperscript{15} For many years Bernau has been a passionate advocate for POD technology for the book printing and publishing industry.

\textsuperscript{16} I would support this view. The decisions of book size, paper stock, quality of cover and quantity of units printed, and required % margin per book sold, necessary to drive a new title into many hundreds of book-selling outlets so as to make a presence, are not the same decisions necessary to maintain a proven marketable title towards the end of its publishing life, or to resurrect out-of-print titles, or indeed to consider publishing small units of a new untried title. POD requires new business models.

\textsuperscript{17} See later in this chapter where Blackwell Science is achieving that 'liberation of content' that Bernau discusses.
Bernau makes an important point. When digital POD technology first became readily available approximately 10 years ago, it was not traditional book printers or publishers who availed themselves of the technology. It was almost immediately embraced by suppliers/users of products such as software, spare-part and training manuals etc. All these products are really just books in another form. Bernau contends that traditional book printers missed an opportunity to control the process and educate their customer base.

Otte, of IBM, has similar comments to Bernau. Otte states that IBM have a number of book printing establishments internationally that produce an average run length of fewer than seven, profitably, because of their specific focus on the target market. He also points to IBM hardware, software and process management solutions that are producing short runs of 50–250, cost effectively, even though they may have higher degrees of post-press labour. He also sees the POD technology continuing to evolve, providing opportunities for new competitors if existing market providers do not embrace the technology. Otte contends that existing providers must embrace the technology themselves, or be relegated to a smaller market share, or be forced out of the market altogether. There is a clear message here: POD can work, is working, and if you don’t do it, someone else will.

Kit Andrews, Marketing Manager of Océ Australia, believes that the culture of the book printing and publishing industry is not geared to the concept of digital print, regardless of benefit. He believes that an Océ/MPG joint venture to develop a POD market in Australia using Océ digital web-technology did not work because of an inability to persuade publishers to comprehend the benefits. Andrews contends that publishers needed to embrace the total life cycle of a book, where use of any particular technology along the cycle is irrelevant. Thus digital POD cannot be viewed in isolation

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18 A concern expressed elsewhere in the chapter is that post-press costs are a high-cost burden to economic digital POD.
19 See Xerox’s Bernau and Random’s Hanrahan comments regarding the need for new business models. Total life-cycle planning for a title can ignore technology used for any one print run, as margin theoretically made for any individual print run is irrelevant, it is only the total margin made by the title’s life cycle that counts. Thus negative margin on a small digital POD production of advance selling copies may provide marketing information to allow more accurate forecasting of quantities required for the main production of sales units. Thus margin maximised or losses minimised for the main production run are benefits far outweighing the initial.
to other forms of manufacturing: digital and conventional manufacturing are complementary.\textsuperscript{20}

Andrews is very frank concerning his industry (digital print, variable data). He believes the POD technology providers (including Océ) took successful transactional print engines designed for high volume variable-data output, and put them into the book printing and publishing arena where their technology and culture do not comfortably fit within traditional print business models.\textsuperscript{21} He states that the POD industry has not yet appropriately come to terms with front-end needs and cost-effective management systems. Other industry professionals quoted in this chapter express similar views.

\textbf{INDUSTRY OBSERVATIONS—INNOVATIVE PUBLISHERS}

Yet other industry players appear to make digital POD viable. Whilst dbooks\textsuperscript{22} in Sydney are digital POD book printing specialists and not publishers, they provide POD services to a number of publishers. Wild & Woolley in Sydney have been digital print book POD specialists for many years.\textsuperscript{23} Pearson Education continue to experiment with in-house digital POD production, and Hawker Brownlow (a specialist boutique educational publisher in Melbourne) produces all its publications using digital POD.

Hawker Brownlow Education (HBE), publishers for over 20 years, commenced printing their own titles approximately 15 years ago, and are a good example of a publisher using digital POD.\textsuperscript{24}

\footnotesize{margin loss on the advance copies. Similarly if the life cycle of a title is extended keeping it in print longer through change of format and production technology, even change to marketing methods (online bookstore for example) then surely a lower end of life margin is better than no margin at all because the title is otherwise out of print. \textsuperscript{20} In this respect Andrews, a POD technology provider, is making the same observation made by Leevers of PMP, a POD technology user. \textsuperscript{21} For example, billing statements on standard text stock, standard sizes, and minimal finishing. \textsuperscript{22} dbooks is part of PMP Communications, probably Australia’s largest non-newsprint printing conglomerate, and has a presence in POD technology in Sydney NSW using Xerox Docutech sheet-fed facilities. Griffin Press, one of the Big Three book printers and based in Adelaide South Australia is also part of PMP Communications. \textsuperscript{23} The web-site for Wild & Woolley describes how they commenced 23 years ago as a small risk-taking publishing house, and 10 years ago developed the Fast Books system of short-run book production. It is common knowledge that Wild & Woolley use Xerox Docutech sheet-fed digital equipment. \textsuperscript{24} HBE decided to print all their own titles many years ago out of necessity. Slevin states they needed short-run facilities to meet the demands of their market niche but}
Patrick Slevin, Financial Controller of HBE, is justifiably proud that HBE print internally 100% of their published books using digital POD technology, and that none of their 2,500 titles—even the earliest published ones—are out of print. A typical sales order averages only 13 units (books) spread over any number of titles, conceivably that might mean one copy each of 13 titles. Slevin states that HBE will, and often do, print a unit of one to meet a customer’s needs if the title is temporary out of stock. I contend that this is a perfect example of a publisher viewing the total life of a book, and its total life earning power, and ignoring the fluctuating margin levels of any single production run. It works. However HBE have chosen not to produce multitudes of book sizes and formats, and Slevin believes that over 90% of their titles are A4 size and of limited text stock range, thus maximising the efficiency of their digital POD technology. Of major consideration for HBE in establishing in-house production 15 years ago was the ability to take full control of their supply chain.

Victoria Hamilton is Publishing Services Manager of Blackwell Science Asia, scientific journal publishers. From its Melbourne offices Blackwell produce a large number of scientific journals for its subscriber customers throughout Australasia. Approximately 80 journals are published regularly throughout each year, sometimes at quantities per issue that might be considered ideal for digital POD production. However, Hamilton advises that scientific content is such that digital POD is unable to reproduce the content at quality levels consistent with the needs of its subscribers. Instead of digital were unable to source externally, also they decided to take full control of the print process to ensure high levels of consistent quality.

25 As mentioned earlier, Pearson Education are moving in a similar direction, standardised product specifications for digital POD product.
26 HBE use Xerox for text (Docutech sheet-fed) and digital colour covers and also bind in-house. Slevin also advised HBE use a standard off-the-shelf accounting package and report-writers, rather than custom-designed management information systems, and have reached high levels of management and accounting efficiency as a result.
27 See comments by Nolan of Pearson Education who has more recently introduced in-house digital POD to also take greater control over the supply chain.
28 Hamilton has been in the mainstream book publishing industry, and for several years worked in the digital prepress environment of a major book printer. One of her areas of expertise is the development of digital solutions for publishing and book printing prepress.
29 A journal should still be considered to be a book. It looks the same and is produced by identical processes to a book.
POD, Hamilton says Blackwell is evolving from conventionally printed hardcopy as prime publication material to online publishing. All articles begin as SGML files, and online versions are turned into metadata with virtually every reference within an article cross-linked online to its source material and beyond. Hamilton believes that Blackwell subscribers are research and online literate, and online journals provide a powerful tool to subscribers that hard copy cannot emulate.

Otte of IBM believes that, as the growth of digital POD books in other countries continues, these will become visible to the Australian market, thus creating a demand for these new publications, specifically trade and scientific journals. However, in Australia, the Blackwell Science Asia experience suggests that innovative and sophisticated publishing solutions may already be bypassing digital hard-copy solutions.

In conclusion, there are concerns in Australia about the high unit cost of books produced using digital POD. There is a widespread view that new business models—models which consider 'beyond unit cost'—need to be developed for both printers and publishers. Experience overseas seems to suggest that Australia's limited success to date using digital POD is not necessarily based on geographic or market size. I suspect the success of the example publishers quoted in this chapter who have embraced internal production of digital POD (cutting out the traditional book printer) is based on considering their processes 'beyond unit cost', thus creating new business models for success.

OUT-OF-PRINT—AN EXAMPLE OF A SIGNIFICANT MARKET FOR DIGITAL POD

There is one significant potential market for POD with mainstream publishers and that is the exploitation of the huge investment in intellectual property locked up in 'out-of-print' and 'end-of-life' books. These number in their thousands of titles per mainstream publisher, have been proven sales performers during their life-cycle, but have reached annual sales volumes per title too low for economic production with conventional print technology. In theory

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30 Whether hard copy or online, the whole publishing process is the same from start to finish.
this is a huge potential market for POD, providing low run just-in-time production and resurrecting economic value to product that has already recovered all or part of its development costs. However there are a number of obstacles, individually not insurmountable, but collectively appearing to overwhelm, and thus far having prevented the return of this asset-base to in-print status in any volume. These obstacles include:

- Reluctance. Gatehouse of MPG says that MPG’s extensive trial of digital POD technology did not persuade publishers to resurrect backlist titles (out-of-print). He contends it would appear to be too difficult a task for publishers to resurrect such products once they transfer to the backlist. Nolan of Pearson Education says that publishers are just not geared to small-order processing, the driving-force being a perceived need to process minimum of ten to twenty copies per order per bookshop customer. Bobby Graham says publishers are slow to change and adapt to new technologies, perceiving the cost of digital books to be too high. She believes the business model currently in place needs to be addressed. Otte of IBM states that IBM have a number of book printing establishments internationally that profitably produce an average run length fewer than seven, which appears ideal for end-of-life and out-of-print titles. I have already commented on similar perceptions of others from all sectors of the industry.

- The vast majority of ‘out-of-print’ and ‘end-of-life’ titles in Australia are not of an age to have been digitised. They are only available as hard-copy printed text or as conventional film, and not as digital files. To be made available for POD printing they need to be scanned to create a suitable digital file, and this comes at a high cost in time, scanning, and file creation. It is possible and practical to digitise this material, but it needs organisation and will.

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31 Bobby Graham is from bob-e-books.com, a boutique online publisher, and herself with considerable mainstream publishing experience, having been in the publishing industry for 25 years working for large trade and education publishers. bob-e-books began as an online publisher of ebooks only but have since added POD paperback versions of the ebooks, sold online on-demand. Her site, and others like it, may be one of the new business models, as also might be the Pearson Education experiment with in-house production of digital POD. She discusses her publishing experience in Book 3.4 of this series.
New Markets for Printed Books

- The type of text stock it can accommodate limits digital POD technology. Though the list of useable stocks continues to grow, the technology is best suited to laser style stocks of 80gsm and above. Traditional book grades of text stock are often bulked-up beyond the normal micron thickness for their grammage specification, are made to meet price constraints and are thus of a quality that does not easily accommodate the stringent specifications required for digital print technology. A shift in business model may consider that many end-of-life or out-of-print titles might not need to be exact clones of their main production runs, and perhaps a change in size, text stock, binding style and vehicle for marketing them would allow resurrection through digital POD. New thinking for new business models.

- Digital print has quality limitations. Currently text can be printed only at the level of 600 dpi, whereas conventional printing technology can be several times that level of quality. Current technology also limits POD to one-colour text: black. Some books, particularly educational texts, require two-colour printing and/or half-tone illustrations needing resolution perhaps beyond the quality constraints of digital POD. However Accenture’s Ad Rem report states that 53% of year 2000 book sales were general fiction and non-fiction trade books, and I would contend that the vast majority of these would have simple single-colour text or very limited and basic half-tones and pictures. While the education and reference market may require more fine detail in its texts, the experience of Pearson Education indicates that they have successfully converted small-run imported titles and resurrected out-of-print titles using digital POD technology. Many of the titles in their program may have originally been published in two-colour text with fine detailed illustrations.

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32 Dpi, dots per inch. The greater the number of dots of ink available in any inch of text in both dimensions, the finer the available detail and the better the quality control over fine text, half-tones etc.
34 Australia’s largest educational publisher.
35 Educational and reference titles are updated and re-issued more frequently than general fiction and non-fiction, and thus are not long-term candidates for out-of-print lists, they become updated, replaced or become obsolete.
Marketing a new title of any type (fiction, non-fiction, educational etc.) requires an image, usually expressed through the book's cover. For instance the covers of many fiction titles employ colour and embellishments to an extraordinary degree to catch the eye of casual browsers in bookstores. Such covers have a very high fixed cost component, regardless of the quantity produced. It is not inconceivable that a production run of 10 covers of such complexity produced conventionally would cost $60 each, 100 covers $6.20 each, and 300 covers $2.20 each (figures are approximate to make a point). Digital print colour covers slash these costs to fractions for short-run, but digital colour is subtly different to the original print run produced using traditional technology, and embellishments are also more difficult technically and because of cost. Many mainstream publishers are concerned about such differences, though the ultimate end-consumer is unlikely to know that such a difference exists. New thinking and new business models may address this problem. The Pearson Education, Hawker Brownlow, and Wild & Woolley business models all use low-cost digital colour covers for their digital POD books, and I suspect that the international customers of IBM producing average run lengths of fewer than seven books, do so also.

Issues also exist around spreading the cost of binding, laminating, packaging, and freight over short-run production.

The confluence of these issues establishes an industry perception that it is not cost-effective to access this large publishing asset-base (thousands of out-of-print books), using digital POD technology. This is not the experience of some publishers. I would suggest that unwillingness to change traditional business models is a bigger issue than simply the notional unit cost of a book produced POD.

**WHAT IF?**

Other chapters in this volume review trends and markets for digital POD. The creation of new business models (the need for which is a common thread throughout this chapter) must also remain for other research. But I will allow myself some 'what if' scenarios:
• If the Australian publishing industry fully absorbs the recommendations of the Accenture AdRem report—the collaborative demand and inventory planning, the book range management, and consolidation of volume recommendations—this may mean the publication of fewer titles and fewer authors. I am not suggesting that fewer total book units will be sold, indeed AdRem suggests the industry ‘...could shift gears from “survival” to “growth”...’ However, I do suggest that the result must mean the creation of a greater degree of risk-adverse publishing strategies leading to fewer titles and fewer authors being published.

• Any savings subsequent to the enacting of the AdRem recommendations (up to $155 million per annum according to the recommendations) are unlikely to be passed on to the ultimate customer by way of reduced retail book prices. Indeed, why should savings be passed on when Accenture report that publishers received declining profits during the years 1994 to 2000. I suggest profit restoration would be the driving imperative. Thus book retail prices may remain at current levels, creating a favourable situation for competing products and publishing processes, which may become increasingly economically viable through emerging technology.

• BookTrack Australia is a recently introduced sales measurement service for the book publishing industry. Michael Webster of BookTrack described a sophisticated reporting system returning unparalleled and timely sales information to the publisher—on unit sales per title, category, etc. I suggest that the ultimate consequence of the successful use of BookTrack by publishers and booksellers will also be fewer trade titles and fewer authors published.

• Discount department stores have an increasing influence on book publishing decisions and revolutionising the way books

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38 As detailed by Webster in his presentation to an RMIT University industry forum in Melbourne, October 2001.
39 Discount Department stores may account for 40%+ of some trade publishers total volume (un-named industry source).
are sold.\textsuperscript{40} With their mass-market exposure they can drive large volumes of units into the market for any popular title. But they cherry-pick a very limited range of authors and titles making it possible that while the total book units sold might actually increase, there is likelihood of some restricting impact on authors and titles.

This could lead to an increase in the number of authors disenfranchised from the mainstream publishing market. But it becomes an added incentive for new forms of publishing, and thus perhaps provides a growth in opportunities for digital POD. As implied by Otte of IBM, if you don’t do it, someone else will.

\textsuperscript{40} The Age, 5\textsuperscript{th} January 2002. An article by Caroline Miller states big department stores are creating a price war selling a limited range of books and using books as ‘loss-leaders’, but Miller also said that this was also expanding the total book market. My contention is, total book units sold expand, numbers of authors and titles sold contract.